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UNIVERSITY OF ALBERTA

Configurations of Self-Esteem, Anxiety, and Depression in an Adult Population

by

Merna M. Schmidt

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

OF Master of Education

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

Edmonton, Alberta

Fall, 1992

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled Configurations of Self-Esteem, Anxiety, and Depression in an Adult Population submitted by Merna M. Schmidt in partial fulfillment of the requirements for the degree of Master of Education.

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Date: July 24, 1992

ABSTRACT

Configurations of self-esteem, anxiety, and depression were investigated in an adult population of 122 individuals attending a public college. Participants completed three self-report inventories, along with a personal data questionnaire. Through the use of Battle's Culture-Free Self-Esteem Inventory-2, Spielberger's State-Trait Anxiety Inventory, and the Beck Depression Inventory, an assessment of these personality constructs was obtained. The data questionnaire provided demographic information on the subjects' gender, age, marital status, and birth category.

Self-esteem was correlated with state anxiety, trait anxiety, and depression in a highly negative direction. Furthermore, state anxiety, and especially trait anxiety, was correlated with depression in a highly positive manner. There were no significant differences between males and females on measures of self-esteem, anxiety, or depression.

Significant differences in self-esteem, trait anxiety, and depression were exhibited among the age categories analyzed ($p < .05$). Scheffe post-hoc comparisons revealed that the youngest age group, 18 - 21 year olds, were significantly different from the oldest two age groups, 26 - 58 years, on all of the personality variables. As a group these younger persons exhibted lower self-esteem, more anxiety, and more depression than did their older counterparts.

Individuals born in the first birth order position reported significantly higher levels of self-esteem than individuals born in later positions. There were no differences among the birth categories for state anxiety. With trait anxiety, first borns reported lower levels than last borns but the difference only approached significance. No significant differences in depression levels were revealed based on birth categories. Marital status had no bearing on the levels of self-esteem, anxiety, or depression.

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1. INTRODUCTION

Self-esteem, anxiety, and depression individually have been the subject of numerous articles and books, demonstrating the interest and importance of these personality constructs. Research has linked self-esteem and anxiety generally (Matthews & Odom, 1989). Moreover, self-esteem and anxiety have been found to be associated in subgroups, such as children (Dorr, Pozner, & Stephens, 1985) and abused women (Trimpey, 1989). Investigation has also been carried out between self-esteem and depression in adult students (Battle, 1978), and in children and high school students (Battle, 1987, 1980). There is also an ongoing debate among researchers as to the nature of the relationship between anxiety and depression. Research focusing on the three variables of self-esteem, anxiety, and depression together, however, has dealt mainly with children (Battle, Jarratt, Smit, & Precht, 1988). There appears to be limited research in the literature pertaining to the relations among these psychological constructs of adults in the general population.

Self-esteem is an influential factor in the functioning and mental well-being of all individuals. Numerous research projects have focused on the development and acquisition of self-esteem, with some attempts to reveal associated variables as well. As research in this area continues, a deeper understanding of the nature of this concept and its influencing factors can be discovered.

Since self-esteem is intimately related to mental health, it is an important part of the healthy development of the individual (Battle, 1989). Branden (1992, 1969) claims that self-esteem is needed because of two basic facts. First, our survival and well-being depends on our appropriate use of our consciousness. Second, our consciousness needs regulating which involves the element of personal responsibility. The choices we make affects our self-esteem, thereby

regulating what choices we do make. Without healthy self-esteem a person cannot realize their potential, nor can a society whose members do not value themselves (Branden, 1992). Most psychologists recognize the need of self-esteem and understand that there is some relationship between one's level of self-esteem and the degree of their mental health, as well as motivation (i.e., behavior in the realms of work, play, love, and interpersonal relationships) (Battle, 1989; Branden, 1969). Further research into understanding this pertinent concept is therefore a worthwhile endeavor.

Another construct which affects healthy mental functioning, is anxiety. Although it is a natural human reaction, the intensity and frequency with which one experiences anxiety may have many negative ramifications. Due to the widespread incidence of anxiety, it is a pertinent construct to many people and therefore deserving of investigation.

The effects of increased levels of anxiety can be seen in cognitive, emotional, behavioral, and physiological levels. It can, for example, interfere with solving problems, with developing new patterns of coping, and with the ability to learn or process information (Trimpey, 1989). Increased anxiety can also be characterized by a heightened use of defensive behaviors, and above-normal levels of physiological arousal (Trimpey, 1989). Heightened anxiety levels is also believed to cause interference with the ability to comprehend information, think critically, and make decisions (Nyamathi & Kashiwabara, 1988). High anxiety can therefore be detrimental to the effective functioning and well-being of an individual.

The final personality variable that is addressed in this study is depression. This is another important construct that affects millions of people and has an adverse effect on a person's well-being. In fact, depression is one of the leading mental or emotional disturbances affecting humans (McDonald, 1988).

Understanding the nature of depression and its associated factors is therefore a useful undertaking.

The consequences of a depressive episode can be numerous. Often it leads to suicide, which is the leading cause of death in certain age groups (Beck 1967). In fact, of any personality disturbance, depression has the highest mortality rate (Becker, 1974). Symptoms of major depressions include loss of interest in activities, changes in weight, changes in sleep patterns, behavior retardation or agitation, tiredness, difficulties concentrating, and feelings of worthlessness (Sarason & Sarason, 1989). Depression may vary in its symptomatology and, consequently, its deleterious impact. Given the incidence and the potential debilitating effects of depression, it is a consequential variable to continue researching in order to comprehend its nature more thoroughly.

Despite self-esteem, anxiety, and depression being important constructs, there has been little research associating all three of these constructs in the same study. It has, however, been examined in children (Battle et al., 1988) and has been correlated with variables associated with potential drug use (Blau, Gillespie, Felner, & Evans, 1988). The relationship has not been explored to any great extent in a population of normal adults, yet university students reported that anxiety, depression, and low self-esteem were among their most frequently mentioned concerns (Baum & Lamb, 1983).

By better understanding the relationship between self-esteem, anxiety, and depression, counsellors may, by identifying one concern of the person, understand how it relates to other personality constructs and give that area the needed attention. In addition to investigating the interactions between self-esteem, anxiety, and depression, the influences of various demographic variables will be discussed: age, gender, birth order, and marital status. By understanding the relationship between demographic variables and self-

esteem, anxiety, and depression, certain groups may be targeted as being at risk. Furthermore, with increased understanding as to the interactive relationship of these psychological constructs, more effective preventative strategies in dealing with anxiety and depression, as well as in elevating esteem levels, may be employed.

II. REVIEW OF LITERATURE

Self-esteem, anxiety, and depression are all important constructs in understanding the effective functioning and mental health of the individual. Associations between pairs of these variables have been made in the literature, however, little research has linked all three of these constructs in the same study. Due to the extensive literature available on the areas of self-esteem, anxiety, and depression, it is not possible to provide a thorough review in one investigation. Instead, an overview of each area will be offered with a focus upon describing and defining these main constructs, followed by a section which integrates the relationships between these constructs. Finally, a section on the relationship between self-esteem, anxiety, and depression with various demographic variables is offered.

Self-Esteem

The importance of self-esteem and its impact on personality development has been discussed and studied all over the world for more than a century. Despite its popularity, there still does not exist a common definition of self-esteem, nor a shared understanding as to the importance of it to our well-being.

The earliest attempt to define self-esteem was by William James in 1890. He believed that a person's self-esteem is based on a comparison of oneself to others. A later attempt to define this construct came from Coopersmith (1967), who saw self-esteem as a judgment made by the person of his or her own worthiness. Skinner (1989) behaviorally defined self-esteem as "a bodily condition resulting from commendation by others or self-commendation learned from others" (p. 33). One of the most current definitions is offered by Branden (1992) who formally defines self-esteem as "the disposition to experience oneself as competent to cope with the challenges of life and as deserving of

happiness." (p. 18). He identifies the two interrelated aspects as self-efficacy and self-respect. All of these definitions share the importance of the self and an element of evaluation.

Some confusion also exists between the meaning of self-esteem and self-concept. Many educators use these terms interchangeably, however, most theorists follow the lead of Beane and Lipka (1980) who view these two terms as separate and not interchangeable. Support for this position is also provided by Coopersmith (1967) and Battle (1989), who believe that although these constructs are closely related, they nevertheless refer to separate aspects of the self. Self-concept is conceptualized in more global terms and is defined by Burns (1979) as a set of attitudes toward the self, which includes attributes, aptitudes, and abilities. It is primarily descriptive and judgmental only in that a qualitative assessment may be assigned to the role played by the individual (Beane & Lipka, 1980).

Self-esteem is described as just one dimension of self-concept (Wylie, 1961). Although it is more specific than self-concept, it is multifaceted and, according to Coopersmith (1967) and Battle (1989), composed of the following elements: general self, social self/peers, school/academics, and home/parents. Self-esteem is the valuative assessment the individual makes, based on personal values, regarding their satisfaction with the role(s) assumed and the quality of performance. An individual's perception of their own worth develops gradually, becoming increasingly differentiated as he or she matures and interacts with others (Beane & Lipka, 1980). According to Battle (1990), once perception of self-worth is established, it tends to be quite stable and resistant to change. Because self-concept is descriptive in nature, whereas self-esteem incorporates an evaluative aspect, it is important to delineate which of these two

constructs one is actually researching and use the appropriate instruments to do so.

Some researchers (Battle, 1987, 1990; Branden, 1969) believe that self-esteem is a fundamental human need throughout all developmental stages that affects achievement patterns, adjustment to environmental demands, and general overall well-being. Self-esteem is also described as one of the primary forces influencing the behavior of all humans (Battle, 1992). Phenomenologists, who assume that subjective perception is the major determinant of behavior, believe that each of us reacts to the world based on our own unique perception of it - not on objective reality (Battle, 1987). Our characteristic reactions are therefore determined by our subjective perception of self-esteem.

Many positive reactions are reported by persons with high levels of self-esteem, such as happiness, security, energy, serenity, motivation, freedom, and spontaneity (Epstein, 1985). High self-esteem individuals also tend to be more effective in meeting the demands of the environment, are more autonomous, and manifest greater confidence in their abilities than those with low self-esteem (Battle, 1987). Conversely, low self-esteem was found to contribute to unhappiness, anger, fatigue, withdrawal, tension, and disorganization (Epstein, 1985). Moreover, low self-esteem individuals tend to withdraw from others, be self-conscious, and tend not to resist social pressures (Battle, 1987). The level of anxiety felt by the individual is another factor which affects well-being.

Anxiety

Anxiety is a natural human reaction, yet one of the most common problems encountered by health professionals. Due to definitional difficulties, there has been some disagreement as to the incidence and prevalence of anxiety

disorders. It has been estimated (American Psychiatric Association, 1980), that 2 to 4% of the individuals in our society will at some time in their lives experience an anxiety disorder. Sarason and Sarason (1989) report that anxiety disorders occur in about 8% of the population, making it the most common psychiatric problem (not depression as was previously believed). Given the high incidence rate of anxiety, it is a topic that is worthy of more thorough investigation.

Lazarus and Averill (1972) defined anxiety as "an emotion based on the appraisal of threat" (p. 246). When one can no longer relate in a meaningful way to the outside world, anxiety results. It is characterized by feelings of tension, apprehension, and nervousness (Spielberger, 1983). Anxiety also diminishes one's cognitive thinking ability, which in turn may diminish one's ability to cope (Nyamathi & Kashiwabara, 1988). Although the predominant mode of response is cognitive, behavioral and physiological reactions may also occur (Lazarus & Averill, 1972).

Even though high anxiety leads to negative ramifications, low levels of anxiety may actually serve to enhance the functioning of the individual. Nyamathi & Kashiwabara (1988) described anxiety as being categorized into degrees to which one's actions are affected. A mild level is everyday anxiety that plays a motivating function and also enhances the individual's perceptions of their environment while leaving intellectual and cognitive processes intact. With moderate levels of anxiety one's perceptual field becomes narrowed and causes an individual to attend to the area of concern at the moment. At high anxiety levels cognitive abilities are reduced and perceptual fields are narrowed even more, which negatively affect one's awareness of the environment. In support of these premises, Nyamathi and Kashiwabara (1988) found that 70% of subjects who reported high anxiety scored low in critical

thinking performance, while 55% of those with low anxiety levels had low critical thinking scores. Individuals with medium anxiety scores, were in between with 61% displaying low critical thinking abilities.

Anxiety may be described as a transitory state that changes in intensity and fluctuates over time, or as a personality trait (Spielberger, 1966). Factor analytic studies conducted by Cattell and Scheier (1961) identified the two distinct anxiety factors which they termed trait anxiety and state anxiety. The former refers to a relatively stable personality trait in which an individual tends to respond anxiously, whereas state anxiety is the transitory feelings of anxiety evoked when a person perceives a situation as threatening which is accompanied by increased physiological arousal (Spielberger, 1966). The stronger the anxiety trait, the more frequently the person will exhibit elevations in state anxiety, due to the tendency to interpret a vast range of situations as being psychologically dangerous or threatening (Spielberger 1983). In fact, this trend continues even in relatively neutral situations. These two types of anxiety are presumed to be relatively uncorrelated when there is no source of distress (Heatherton & Polivy, 1991), nevertheless both Knight, Waal-Manning, & Spears (1983) found a correlation of .65 between scales measuring state and trait anxiety in a general health survey. Another personality construct often bound to anxiety, is depression.

Depression

Depression, like anxiety, is one of the leading mental or emotional disturbances affecting humans (McDonald, 1988). Millions of people all over the world suffer from some form of a depressive disorder and often it leads to suicide, which is the leading cause of death in certain age groups (Beck, 1967). In fact, of any personality disturbance, depression has the highest mortality rate

(Becker, 1974). In a Canadian study Barnes, Curries, & Segall (1988) found that 15% of the females and 19% of the males were depressed. Given the prevalence and incidence of depression, it is an important construct to continue researching to enhance our understanding and knowledge.

No general agreement exists as to the relationship of depression to normal mood swings (Beck, 1967). Disputes have occurred over whether the relationship between depression & normal mood is a dichotomous or continuous one. According to Zung (1974), depression is "an affect or feeling tone" which "is a ubiquitous and universal condition which as a human experience extends on a continuum from normal mood swings to a pathological state" (p. 170). Contrariwise, McGrath, Keita, Strickland, & Russo (1990) argue that depression is not a continuum, but rather it varies in type and in the contribution of varying risk factors.

There appears to be universal acceptance, however, of the major signs and symptoms, such as low mood, pessimism, self-criticism, social withdrawal and somatic preoccupation (Battle et al., 1988; Beck, 1967). The term "depression" is frequently used to refer to feeling "down" or "blue", which, according to DSM III classifications, would refer to a normal depressive mood rather than an affective depressive illness (Angst, 1982). Diagnosis of depression is also frequently missed since it may often be disguised as another illness (Beck & Beamesderfer, 1974). There exists at least three meanings of depression - as a mood, a symptom, or a syndrome. McGrath et al. (1990) argue that the distinction between an isolated symptom of depression and a continuous group of symptoms, or syndrome, must be maintained. Due to the extremes in signs and symptoms of what the general public, as well as professionals, refer to as "depression", it is often a misunderstood term.

Depressive disorders may also be characterized as being either endogenous or reactive. When depression occurs without a recent history of external stress it is presumed to be caused essentially by internal factors, such as some intrinsic biological process, and is referred to as endogenous depression (Beck, 1967). On the other hand, reactive depression is thought to develop in response to the environment, such as a recent loss, disappointment, or stress (Becker, 1974). Few people, however, will fall exclusively into either of these categories. Rather, they will exhibit characteristics to varying degrees that are common to both (Kashani et al., 1981).

Although the personality constructs of self-esteem, anxiety, and depression are important in themselves, an association between them also exists. To understand the linkage between these constructs, an overview of the relationship between each pair will be discussed.

Self-Esteem and Anxiety

It is well recognized that low self-esteem is a clinical component of several psychiatric conditions, including anxiety (Ingham, Kreitman, Miller, Sashidharan, & Surtees, 1986). Netz, Tenenbaum, & Sagiv (1988) reported a moderately negative relationship between trait anxiety and self-esteem in middle-aged men and women. In a study of children in elementary school, Dorr et al. (1985) also found that trait anxiety and self-esteem are strongly related psychological constructs, which supports the beliefs of both Spielberger (1966) and Coopersmith (1967). Matthews and Odom (1989), however, reported that although low levels of both state and trait anxiety associated moderately with high levels of self-esteem in 10 to 13 year olds, it was state anxiety that associated with self-esteem even more than trait anxiety.

Epstein (1985) believed that people become anxious when they feel they are threatened physically, or when they cannot make sense of their experiences, or when they perceive a threat to their self-esteem. Branden (1969) describes anxiety as a crisis of self-esteem. Mathes, Adams, and Davies (1985) further explained that when loss of self-esteem results from a threat to the individual's well-being, the response is either "flight or fight". Corresponding to flight and fight are the emotions of anxiety and anger. They therefore hypothesized that loss of self-esteem causes anxiety, however clear support for this assumption was not found. Studies of this nature are usually descriptive and correlational, with no corresponding conclusion regarding causality. Burns (1979) suggested that the relationship between low self-esteem and anxiety may be due to learning negative attributes through classical conditioning whereby anxiety responses are evoked as a result of unfavorable characteristics being assigned to the individual. Likely it is a reciprocal relationship that exists between self-esteem and anxiety with multiple determinants (Dorr et al., 1985).

Heatherton and Polivy (1991) distinguished between state and trait forms of self-esteem. They claim that state self-esteem is closely related to trait or general self-esteem level under normal circumstances. However, when the ego is subjected to distress, state self-esteem moves away from trait measures so that the correlation is weakened. This is contrary to the pattern observed for state and trait anxiety, in which those high in trait anxiety are likely to become more state anxious when the ego is threatened (Spielberger, 1966). The relationship between both trait and state anxiety with self-esteem in normal adults will be investigated in the present study. Another important relationship to research is that between self-esteem and depression.

Self-Esteem and Depression

In addition to anxiety and self-esteem, the relationship between depression and low self-esteem is also often made. The nature of this association, however, is not well understood. Some include low self-esteem in the definition of depression (Garber, 1984) and, in fact, DSM-III-R (American Psychiatric Association, 1987) includes low self-esteem as one of the diagnostic criteria for a major depressive disorder diagnosis. Others, however, claim that a person can be depressed without lower self-esteem or can have lower self-esteem without manifesting many of the depressive symptoms (Tennen & Herzberger, 1987). Self-esteem and depression are viewed as being conceptually and empirically distinct, at least at the trait level (Heatherton & Polivy, 1991). Ingham, Kreitman, Miller, Sashidharan, & Surtees (1987) maintained that, in their study, low self-esteem did not predict the occurrence of depression. According to Lancet (1988), low self-esteem is associated with a predisposition to depression, even if the individual was not actually depressed at the time of the self-esteem measurement. In fact, reduced self-esteem may be one of the final factors causing vulnerability to depression (Brown, Andrews, Harris, Adler, & Bridge, 1986). Tennen and Herzberger (1987) argue that it is vulnerable self-esteem, rather than self-esteem per se, that is a significant factor in depressive episodes. It has long been known that a decline in self-esteem is a major triggering factor for depression, and that once a depressive state is triggered, a further decline in self-esteem occurs (Lancet, 1988).

Correlational studies have found that as self-esteem increases, depression tends to decrease (Battle 1978, 1987; Tennen & Herzberger, 1987). Battle (1980) specified that it is the personal facet of self-esteem that correlates higher with depression than the social facet. This indicates that depression is a

distressful mood characterized by reduced feelings of personal worth. Unfortunately, according to Tennen and Herzberger (1987), most studies of self-esteem do not include an assessment of depression and studies of depression do not assess self-esteem. Given previous findings, a negative correlation between self-esteem and depression is expected in the present study.

Although self-esteem and depression are highly correlated, they appear to have differing causes. Self-esteem is believed to be largely a function of existing role performances. On the other hand, depressed affect is not only a function of these role performances, but also the degree of closeness and bonding one had with parents and peers while growing up, especially in adolescence (Bohrnstedt & Fisher, 1986). Furthermore, self-esteem is claimed to be alterable by taking on such roles that the individual can competently perform, whereas depressed affect can be continuous, reflecting the quality of relationships with parents and peers during the growing-up years (Bohrnstedt & Fisher, 1986). Although depression and self-esteem are associated, depression is most commonly linked to anxiety.

Anxiety and Depression

Much debate has occurred over the relationship between anxiety and depression, yet the relationship remains unclear. There is considerable overlapping of symptomatology between anxiety and depression. This overlap has been cited as the most significant support for conceptualizing the two disorders as being represented by a continuum (Stavrakaki & Vargo, 1986). The unitary position for the relationship between these two variables is also supported by the lack of stability of the clinical diagnosis between anxiety and depression, by the lack of a specific response to drug treatment, and to the failure to discover separate dimensions of anxiety and depression in both self-

rated and observer-rated scales (Stavrakaki & Vargo, 1986). An alternative explanation for the strong empirical association between anxiety and depression is offered by Mook, Van Der Ploeg & Kleijn, (1990), who assert that these variables may simply be highly interrelated aspects of human functioning.

Several researchers (Battle, 1988; Clark, Beck, & Stewart, 1990) claim that although there are some shared traits of anxiety and depression, there are sufficient differences between them in terms of symptoms, course, and treatment to consider them as two distinct disorders. The difficulty in dealing with these variables as separate entities seems to be in the way it is measured. Gotlib (1984) claims that self-report measures of anxiety and depression assesses a general psychiatric disorder rather than independent constructs. Some researchers contend that self-report instruments may not actually discriminate between anxiety and depression (Dobson, 1985a; Watson & Kendall, 1989b). Many of the well-known measures contain a mixture of both anxious and depressive items, which lowers discriminant validity and raises the correlation (Dobson, 1985b). In fact, Dobson (1985b) calculated correlations between many of the scales and found that the correlation among anxiety scales was .66; among depression scales, it was .69; and the average correlation between anxiety and depression scales was .61. One notable exception was reported by Beck (1967), who claims the scores on the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) were strongly correlated with ratings of depression made by clinicians, but were essentially unrelated to ratings of anxiety. Further recent evidence also indicates that the BDI differentiates depression from anxiety (Beck, Steer, & Garbin, 1988).

Many other researchers focus on the various differences between anxiety and depression. Kendall and Ingram (1989) emphasize that although depressive and anxious states share some common mechanisms, there are

also features unique to each disorder as evidenced by the less than perfect correlation. The most clear distinction between these two constructs is the "independent dimensions of positive and negative affect" (Barlow, 1988, p. 67). Anxiety can be characterized as high negative affect with a fear component, while depression can be characterized as low positive affect. Barlow (1988) further delineates these two mood states by explaining that anxiety refers to engagement and activity, with an effort to deal with difficult situations. Contrariwise, depression involves a retardation of behavior and an associated lack of physiology. Another claims (Dobson, 1985b) the major difference between anxiety and depression is that the former is future oriented, whereas depression is either tied to present or past events. According to Beck's cognitive theory of depression and anxiety (Beck, 1967), cognitions associated with depression focuses on loss, whereas cognitions associated with anxiety focuses on threat of loss. Rholes, Riskind, & Neville (1985) tested this supposition and found that although threat cognitions were associated with solely anxiety, loss cognitions were related to both depression and anxiety.

An alternate viewpoint is offered by Watson & Kendall (1989a) who propose that the differences between anxiety and depression are relative, rather than absolute. Most features can be found in both disorders, but they more strongly or centrally characterize one or the other. One of the ways in which these variables may overlap is by the similar behaviors involved in anxious and depressive responses. The difference, however, may be due to the functional histories (e.g. procrastination could reflect either avoidant anxiety or unmotivated depression) (Rehm, 1989).

Although anxiety and depression have many features in common, they clearly are not identical or interchangeable constructs (Watson & Kendall, 1989a). As evidenced, there is no unanimously agreed-upon solution to the

problem of how anxiety and depression are related. They are, however, classified as separate disorders both clinically through DSM-III and statistically through discriminant function analysis (Stavrakaki & Vargo, 1986). As also evidenced, a relationship does exist between anxiety and depression. They are indeed closely related constructs, both theoretically and empirically. Given the strong correlation between them, it is clear that anxiety and depression cannot be meaningfully examined in isolation but that they must be studied together (Watson & Kendall, 1989a).

Due to the number of studies that have found a moderately strong positive relationship between anxiety and depression, it is expected that the present study will involve replication of this finding. Some studies (Orme, Reis, & Herz, 1986; Tanaka-Matsumi & Kameoka, 1986) found a higher correlation between depression and trait anxiety than between depression and state anxiety. This is an interesting finding, given that most of the self-report measures of depression are intended to measure the degree of current depression (i.e., are state measures) (Dobson, 1985b). The present study will therefore provide a test of the hypothesis that depression and trait anxiety are more highly correlated than depression and state anxiety. Self-esteem is another personality construct that has been linked with both anxiety and depression.

Self-Esteem, Anxiety, and Depression

Low self-esteem has been found to be associated with many psychiatric disorders, including depressive illness and anxiety states (Lancet, 1988), yet the relationship between these three constructs has yet to be widely researched. It has been studied in children (Battle et al., 1988) and has been significantly correlated with variables associated with potential drug use (Blau

et al., 1988), but the relationship has not been explored to any great extent in a population of normal adults.

Silverstone (1991) studied psychiatric out-patients and found that although all patients scored lower on self-esteem than normal populations, the group with anxiety disorders scored higher on this measure than those with depression. Ingham et al. (1986), however, found that self-esteem correlates at about the same level with anxiety as with depression. Battle et al. (1988) discovered that, in children, depression and anxiety correlate more highly with one another than they do with self-esteem. This finding was supported by Blau et al. (1988), who studied grade seven students and concluded that higher self-esteem levels were associated with lower levels of depression and anxiety, and that higher depression levels were associated with higher anxiety levels. Another study (Orme et al., 1986) demonstrated that a measure of depression moderately correlated with both self-esteem and state anxiety, and highly correlated with trait anxiety. Wilson & Lavelle (1990) studied a group of Zimbabwean university students and found that the intercorrelations among self-esteem, trait anxiety, state anxiety, and depression were uniformly significant.

Ingram et al. (1986) suggested that the association between self-esteem and anxiety may be qualitatively different from that associated with depression. Although major depressive disorders are associated with impairments of self-esteem, the role of anxiety has not yet been adequately studied (Ingram et al., 1986). It is generally accepted, however, that low self-esteem is not the same thing as depression or anxiety (Heatherton & Polivy, 1991). Due to the conflicting results concerning the relationship between self-esteem, anxiety, and depression, and the need for further investigation, the correlational relationship between these constructs will be a part of the current project.

The Personality Constructs and Demographic Variables

Demographic variables are often important considerations in understanding psychological constructs. By researching the relationship between constructs and demographics, not only is the nature of the construct more thoroughly understood but, additionally, certain groups may be identified as being at-risk for suffering from the negative consequences of having low self-esteem, high anxiety, or high depression. A review of literature pertaining to the relationships between self-esteem, anxiety, and depression with gender, age, marital status, and birth order is offered.

Gender.

The relationship with gender differs between the psychological constructs of self-esteem, anxiety, and depression. With regards to self-esteem, a strong relationship between it and gender has not been established. After reviewing over thirty comparative studies, Maccoby and Jacklin (1974) concluded that there were not any consistent differences between males and females in self-esteem. Also, both Silverstone (1991) and Zuckerman (1989) failed to find a correlation between gender and self-esteem. Consequently, a significant relationship between self-esteem and gender is not expected to be found in the present study. According to Skaalvik (1986), few studies in gender and self-esteem have been conducted on adults. Therefore, little information exists about gender differences for these age groups.

Results of studies on anxiety have been contradictory, possibly due to the ambiguity in defining "anxiety" (Kaliappan, Rajalakshmi, & Sarada Menon, 1982). There has been disagreement among researchers as to the relationship between anxiety and gender, therefore further investigation into this possible relationship is needed. Some studies (Gotlib, 1984; Knight et al., 1983;

Zuckerman, 1989) found that women reported higher anxiety levels than men or specified that they were higher in trait anxiety only (Mook et al., 1990; Tanaka-Matsumi & Kameoka, 1986). Based on the data of Carey, Gottesman, & Robins (1980), the average prevalence rate for females is 2.17 times that for males. Spielberger (1983), however, found that the mean trait anxiety scores for working adults and high school students did not differ between the genders, but that female college students and military recruits reported slightly higher trait anxiety scores than their male counterparts. In a study of Canadian university students, Dobson (1985a) found no significant differences in anxiety between males and females. These results were replicated in a group of Australians as well (Ray, 1984). None of the studies report males as exhibiting higher anxiety levels than females, therefore in the present study the researcher expects to find either no relationship between anxiety and gender, or that females will report higher trait anxiety scores than males.

Although there is no relationship between self-esteem and gender, and conflicting reports with anxiety and gender, perhaps one of the most serious demographic variables which relates to depression is that of gender. Numerous studies have found that females are more depressed (Gotlib 1984; Knight et al., 1983; Long, 1988; Netz et al., 1988; Weissman & Klerman, 1977; Zuckerman, 1989), even when marital status was controlled (Amenson & Lewisohn, 1981). In fact, women's risk for depression exceeds that of men by a ratio of 2:1 (Carey et al., 1980; McGrath et al., 1990; Weissman & Klerman, 1977). One study (Roberts & O'Keefe, 1981) investigated the influence of the stereotype roles of wives and husbands on depression. They discovered that wives reported more symptoms of depression than husbands in both traditional and nontraditional relationships (in which both husband and wife were employed). Weissman & Klerman (1977) concluded that the differences in

depression levels between females and males in Western society are real and not an artifact of reporting or health care behavior. A study of a Canadian urban sample (Barnes et al., 1988) and another on Canadian university students (Dobson, 1985a), however, failed to find any significant relationship between gender and depression. Further research is required to assess the relationship between these two variables. The present research will test the hypothesis that higher rates of depression occur in women. Another important demographic variable to consider is that of age.

Age.

Unlike the number of studies which investigated the relationship between gender and self-esteem, few researchers have examined the relationship between age and self-esteem. Similar to gender, however, no association was discovered between age and self-esteem (Silverstone, 1991). A relationship between these variables is therefore not expected to be found in the present study.

There have also been few studies which have investigated the relationship between many of the demographic variables and anxiety, including age. Spielberger (1983) reported similar anxiety scores for those under 50 years of age, but a slightly lower score for those above this age. Another study (Nyamathi & Kashiwabara, 1988) also reported a negative correlation between age and anxiety, whereas no significant age differences were found by Ray (1984) or by Tanaka-Matsumi & Kameoka (1986).

Conflicting findings have also been reported on the relationship between depression and age. Barnes et al. (1988) found that younger subjects reported higher depression scores than older subjects, however other studies (Garber, 1984; Golding, 1988), found that as age increases, so does depressive levels.

Based on past research findings, it is expected that the present study will reveal no significant association between age and self-esteem, and a negative correlation between age and anxiety. Due to the conflicting reports on the relationship between depression and age, it is unknown as to whether a significant correlation in either direction will be discovered in the present project.

Birth Order.

Birth order is another demographic variable that has been shown to relate to psychological constructs. Studies (Gates, Lineberger, Crockett, & Hubbard, 1988; Howarth, 1982; Kidwell, 1982) found that birth order had an important effect on the level of self-esteem. First born children displayed significantly higher self-esteem levels than second born and youngest children. Also, according to Rosenberg (1965), only children (especially only boys) tend to have higher esteem levels than those with siblings. These hypotheses will be tested in the present research to determine if support exists for these propositions.

With respect to birth order and anxiety, Gates et al. (1988) discovered that first borns showed significantly less trait anxiety than third borns, and less state anxiety than second born or youngest children. According to another study (Howarth, 1980), first borns displayed significantly less anxiety than only children, middle children, or last children in the female and in the combined sample, however this effect was not quite attained at the five percent significance level in the male sample.

The relationship between depression and birth order has not been investigated to any great extent. One study, conducted by Gates et al. (1988),

claim that first born children reported significantly lower on a depression inventory than second, third, fourth born, and youngest children.

In the present study, it is expected that first born children will report significantly higher self-esteem levels than later born children. Additionally, only children will report higher self-esteem than those with siblings. Previous studies have not reported clear results on the relationship between anxiety and birth order, however based on these findings it is expected that, like self-esteem, first borns and only children will report less anxiety than later born children or those with siblings. Similarly, first born children will report lower levels of depression than later born children. In all studies it appears that first born children have the best position in the family in that they reveal higher self-esteem, lower anxiety, and lower depression than those in the middle born or last born positions.

Marital Status.

Few studies represent examination of the relationship between marital status with self-esteem, anxiety, and depression. With regards to anxiety, Tanaka-Matsumi & Kameoka (1986) reported no significant differences between marital status and anxiety. The present study will therefore test this null hypothesis.

With regards to depression, marital status is an important variable as those who were divorced or separated showed higher depression levels than those who were married (Barnes et al., 1988; Sarason & Sarason, 1989). Another study (Golding, 1988) collapsed the various categories of marital status into either "married" or "not married" and also found that the latter group reported higher levels of depression than the married group. Williams and Poling (1989) point out that divorce or separation may be an outcome of a depressive

disorder, rather than a risk factor. More research in this area is required, therefore the present researcher will investigate the relationship between marital status with self-esteem, anxiety, and depression to determine if their is support for these previous findings.

Summary

Despite the conceptual ambiguities and conflicting research results involved with the variables under study, there is some evidence indicating possible relationships between self-esteem, anxiety, and depression. It has been demonstrated that each of these variables are important in the healthy development and well-being of the individual. There also exists relationships between pairs of these variables, as well as associations linking all three of the variables. To date, however, little research has been conducted on investigating the association between self-esteem, anxiety, and depression in a group of normal adults.

To thoroughly understand the relationship between these personality constructs, it is also necessary to examine the effects of demographic variables. The present study will therefore focus upon gender, age, birth order, and marital status with all three of the personality constructs of self-esteem, anxiety, and depression.

Hypotheses

Specifically, the following testable hypotheses emerge from the previous review:

1. Lower levels of self-esteem will be associated with higher levels of both anxiety and depression.

2. Self-esteem and state anxiety will be more highly correlated than self-esteem and trait anxiety.

3. Depression and trait anxiety will be more highly correlated than depression and state anxiety.

4. There will be no significant difference in self-esteem levels between males and females.

5. There will be no significant difference in state anxiety levels between males and females.

6. Females will report higher levels of trait anxiety than males.

7. Females will report higher levels of depression than males.

8. There will be no relationship between age and self-esteem.

9. There will be a negative correlation between age and anxiety.

10. There will be no relationship between age and depression.

11. First born individuals and only born individuals will report significantly higher self-esteem levels than later born individuals and those with siblings.

12. First born individuals and only born individuals will report significantly less anxiety than those born in later positions within the family and those with siblings.

13. First born individuals will report significantly lower depression levels than those born in later positions within the family.

14. There will be no relationship between marital status and self-esteem or between marital status and anxiety.

15. Those who are divorced or separated will report higher depression levels than those who are married.

III. METHOD AND PROCEDURE

This study is designed to investigate the relationship between self-esteem, anxiety, and depression and to also explore the relationship between these personality variables and the demographic variables of gender, age, birth order, and marital status. In this chapter the method and procedural design of this project is discussed, beginning with what subjects were involved. This is followed by a description of the instruments used along with reports of the reliability and validity of each. Finally, a description of how the data is analyzed will be presented.

Subjects

Students enrolled in psychology and sociology classes during the Spring 1992 session at Grant MacEwan Community College served as subjects for this study. This is a public college which therefore provided a more random sample of adults than would private colleges. Also, since the classes involved in this study were offered in spring session, many of the participants were not full-time students, thereby also providing a sample that is more representative of the general community than a sample of exclusively full-time students would provide.

The researcher entered each class, explained the nature of the study, and asked the students to participate voluntarily. All respondents were guaranteed that their results would be kept confidential and were assured that they had the option of withdrawing from the study at any time by stating that they no longer wished to complete the inventories. Each participant received the State-Trait Anxiety Inventory, the Beck Depression Inventory, and the Culture-Free Self-Esteem Inventory to complete, in that order. Respondents also filled out a short personal information questionnaire which asked them to indicate their gender,

age, marital status, education level, and birth order (see Appendix A). A more in-depth verbal description of the study by the researcher followed, explaining the nature, goals, and the hypotheses of the investigation. The final sample consisted of 122 subjects.

Instruments

Culture-Free Self-Esteem Inventory.

The CFSEI-2 for adults (Form AD) is a standardized, self-administered inventory consisting of 40 questions that identify three categories of self-esteem: General, Social, Personal, as well as a Lie scale which assesses the degree of defensiveness. The General subscale consists of sixteen questions, whereas the other subscales have eight questions each. Overall perceptions of worth are assessed in the General subscale which includes questions such as "Are you happy most of the time?" and "Can you do most things as well as others?". Questions on the Social self-esteem subtest include "Do you spend most of your free time alone?" and "Do most people you know like you?". This component of the CFSEI focuses on perceptions the individual holds regarding the quality of their relationships with peers. Included in the Personal subscale, which is the aspect of self-esteem that refers to one's most intimate perceptions of self-worth, are "Are your feelings easily hurt?" and "Are you more sensitive than most people?". The Lie subtest contains questions such as "Do you like everyone you know?" and "Do you always tell the truth?". This subtest measures defensiveness by asking queries that ascribe characteristics of a generally valid but socially unacceptable nature. The Lie scale is not included in the overall score, but rather the total self-esteem score is calculated by adding the scores obtained on the General, Social, and Personal subscales.

To control for compliant response style, questions are balanced between positive and negative content. Responses are of the forced-choice variety in which the individual answers each question with either yes or no on an answer sheet that was subsequently hand scored. This inventory can be administered in approximately ten to fifteen minutes.

Battle (1992) reported internal consistency reliability alphas of .78, .57, .72, and .54 for the general, social, personal, and lie subscales, respectively. Test-retest correlations over a four-week period were .81 for all subjects; the value for males and females were .79 and .82 respectively (Battle, 1977). Evidence of concurrent validity was presented by correlating the CFSEI total score with Coopersmith's (1967) Self-Esteem Inventory. The range of correlations for the total sample was .71 to .80. Kozeluk & Kawash (1990) found a correlation of .86 between the two measures. Also, Battle (1977) reported that correlations between the CFSEI and a measure of depression was -.55 for the total sample, and another measure of depression correlated -.75 (Battle, 1987). Correlations between self-esteem and a measure of anxiety for adults was -.77 for the total sample (Battle, 1992). This inventory not only shows acceptable levels of validity and reliability, but was also developed and normed locally, making it an appropriate choice for the present study.

State-Trait Anxiety Inventory.

The STAI is the most widely used measure of anxiety (Buros, 1978) and is described as "the most carefully developed instrument from both theoretical and methodological standpoints" (Ramanaiah, Franzen, & Schill, 1983, p. 531). It was designed for use with high school and college students, and with adults (Chaplin, 1984). The STAI is a standardized self-report measure revised in

1983 (called "Form Y") and is comprised of a 20-item trait anxiety scale (A-Trait) and a 20-item state anxiety scale (A-State).

The A-State scale is administered first since state anxiety measures are sensitive to testing conditions. Therefore, prior completion of a trait anxiety measure may affect responses to the state anxiety scale (Chaplin, 1984). In contrast, the A-Trait items are expected to be relatively stable and unaffected by situational stress (Gotlib & Cane, 1989). On the A-State scale, the respondents are required to rate the intensity of their feelings at the moment to each statement on a four-point scale from "not at all" to "very much so". It includes statements such as "I feel calm" and "I am tense". The A-Trait scale follows and respondents are asked to indicate how they generally feel by rating the frequency of their symptoms of anxiety on a four-point scale from "almost never" to "almost always". It includes statements such as "I feel pleasant" and "I feel nervous and restless". The STAI is one of the most nearly balanced scales with nine out of 20 items on the trait anxiety scale, and ten out of 20 items on the state-anxiety scale, worded in an anti-anxiety direction (Chaplin, 1984). Each scale has a potential range of scores from 20 to 80, with higher scores indicating greater anxiety. This inventory may be administered in less than ten minutes. Responses were recorded on an answer sheet that was subsequently hand scored.

In a review of the STAI, Chaplin (1984) gave high marks to the psychometric properties of this inventory. Spielberger (1983) claims that the factor structure of Form Y has shown clear-cut distinctions between state and trait anxiety. He reported internal consistency reliability alpha coefficients of .93 for the A-State and .90 for the A-Trait. Test-retest correlations for college students ranged from .73 to .86 on the A-Trait, and .16 to .62 for the A-State, which is expected since a valid state anxiety measure should be sensitive to current situational factors at

the time of testing. The STAI discriminated between normals and psychiatric patients for whom a major symptom was anxiety, providing evidence of construct validity. Also, the scores of military recruits during stressful training programs were much higher than college and high school students on the A-State scale, as were scores of college students under examination conditions. This inventory has shown to be a good measure of state and trait anxiety with acceptable reliability and validity, along with ease of administration, making it a favorable choice for the present study. Also, an important feature of the STAI is that it was specifically designed to assess anxiety independent of depression (Vagg, Spielberger, & O'Hearn, 1980) which is an important consideration for use in the present investigation.

Beck Depression Inventory.

The BDI is a 21-item self-report measure of the severity of depressive symptomatology which was used in the present investigation. It was designed to assess depression independent of any particular theoretical bias (Stehouwer, 1985). It is important to note that by changing instructions for the BDI it could measure state depression or a more enduring trait, however, the BDI is not intended to be a trait measure (Hill, Kemp-Wheeler, & Jones, 1986). The categories assessed in this inventory are sadness, pessimism, sense of failure, dissatisfaction, guilt, expectation of punishment, self-dislike, self-accusation, suicidal ideas, crying, irritability, social withdrawal, indecisiveness, self-image change, work difficulty, insomnia, fatigability, anorexia, weight loss, somatic preoccupation, and loss of libido. As can be seen, this instrument is designed to reveal the cognitive, affective, behavioral, as well as physical or somatic aspects of depression.

Each item on the BDI describes one of these specific categories of depression and consists of four or five self-evaluative statements, ranked from neutral to maximum severity with a corresponding numerical value from zero to three. The BDI orders the items in a consistent manner from least to most pathological, making the instrument unduly vulnerable to response sets that are either defensive or malingering in nature. Dahlstrom, Brooks, & Peterson (1990) presented the BDI in the original item order along with a backwards version (reversal of the order of items within each group) and a random version, along with other measures of depression. They found that the correlations with the other instruments were comparable for all three forms, however the random order BDI resulted in a significantly higher depression score than did either the original or backwards version. They recommend using the random order of items within each set since this version appears to break up a response set to endorse either the first or last item. Their random order version was therefore utilized in the present investigation.

Subjects are asked to select the statement from each item that best describes how they are feeling at the moment. The score is obtained by adding the total number of points, based on which statement was chosen. The higher the score, the more symptoms of depression and/or the greater the intensity of those symptoms. Although there is no arbitrary cut-off score, the mean is usually between four and six, however the range from zero to nine may be viewed as normal (Kendall, Hollon, Beck, Hammen, & Ingram, 1987). In a group of undergraduates, the mean BDI score was found to be 6.81 (Hill et al., 1986). Based on the total score, individuals are categorized into four or five levels of depression from normal to severe. Subjects recorded their answers on an answer sheet which was subsequently computer scored.

Measures on the initial sample yielded a split-half reliability coefficient of .86 (Beck & Beamesderfer, 1974). A meta-analysis on twenty-five years of research literature about the BDI conducted by Beck et al. (1988) found that the BDI's internal consistency estimates produced a mean coefficient alpha of .81 for nonpsychiatric subjects. Test-retest correlation coefficients ranged from .60 to .83. In support of concurrent validity, the meta-analyses revealed correlations between clinical ratings and the BDI with a mean correlation coefficient of .60 for nonpsychiatric samples. The BDI also has concurrent validity with a variety of other measures of depression, with a mean correlation of .60. The meta-analyses also revealed much support for discriminant validity, as the BDI was able to differentiate between psychiatric and nonpsychiatric samples. The BDI has also been reported to discriminate reliably between depression and anxiety (Beck, 1967). This inventory is a reliable and valid measure of depression that has been shown to differentiate between anxiety and depression, which is an important attribute given the nature of the present study. Also, an individual can have low self-esteem without manifesting any of the symptoms that reflect a belief in self-blame that is included in the BDI, which is another important consideration in the current investigation.

Data Analysis

The concern of the researcher is the relationship between self-esteem, anxiety, and depression. To explore the direction and intensity of the relationship between these psychological variables and demographic variables, a large correlational matrix was generated. Also, descriptive statistics are reported, such as the mean and standard deviation on each of the three constructs for males and for females.

To assess if there is a significant difference in self-esteem, anxiety, and depression scores based on the subjects' age-levels, a one-way analysis of variance was calculated. Also, to determine if a significant relationship exists between these personality variables and gender, a student's t-test was performed. In determining the relationship between marital status and self-esteem, anxiety, and depression, as well as between birth order and these personality constructs, several one-way analysis of variance were calculated. The criterion level for judging significance was set at .05 (two-tailed) for all calculations.

IV. RESULTS

To assist the readers in gathering a more thorough understanding of the findings from the current investigation, this chapter begins with a description of the total sample of individuals who were involved in this study. This will be followed by a restatement of each hypothesis, after which the pertinent statistics and appropriate conclusions are presented.

Demographic Information

A total of 122 subjects agreed to participate in this project. Table 1 is a presentation of the frequencies and percentages for each of the demographic variables.

Table 1

Data Summary of Demographic Variables

Variable	Frequency	%
GENDER:		
Females	98	80.33
Males	24	19.67
AGE:		
18 - 21 years (Group I)	31	25.41
22 - 26 years (Group II)	29	23.77
27 - 34 years (Group III)	31	25.41
35 - 58 years (Group IV)	31	25.41
Mean = 29.34 (S.D. = 9.12)		

Table 1 - continued.

Variable	Frequency	%
MARITAL STATUS:		
Never Married	55	45.08
Married	49	40.16
Separated or Divorced	18	14.75
BIRTH ORDER:		
Only Born	5	4.10
First Born	35	28.69
Older & Younger Siblings	37	30.33
Last Born	45	36.88

Table 2 provides the mean scores, standard deviations, minimum scores, maximum scores, and range of scores for the total sample for each of the personality constructs under investigation. These include the total self-esteem scores along with the four subscale scores, the state anxiety and trait anxiety scores, as well as the depression scores.

Table 2

Means, Standard Deviations, Minimums, Maximums, and Range of Scores for the Total Sample on Self-Esteem, Anxiety, and Depression

	Mean	S. D.	Min.	Max.	Range
Self-Esteem:					
Lie	6.23	1.78	2	8	6
Social	6.54	1.50	0	8	8
General	11.92	3.46	2	16	14
Personal	4.91	2.33	0	8	8
TOTAL	23.37	6.40	4	32	28
State Anxiety	38.09	10.31	20	61	41
Trait Anxiety	40.28	9.96	20	66	46
Depression	9.63	7.22	0	32	32

Hypotheses I, II, and III

Hypothesis 1:: Lower levels of self-esteem will be associated with higher levels of both anxiety and depression.

Hypothesis 2: Self-esteem and state anxiety will be more highly correlated than self-esteem and trait anxiety.

Hypothesis 3: Depression and trait anxiety will be more highly correlated than depression and state anxiety.

Analysis: To investigate the relationship between these various personality constructs, a correlation matrix was generated that is presented in the following table.

Table 3

Correlation Coefficients for the Variables Social Self-Esteem (Soc SE), General Self-Esteem (Gen SE), Personal Self-Esteem (Per SE), Total Self-Esteem (TOT SE), State Anxiety (S Anx), Trait Anxiety (T Anx), Depression (Dep), and Age

	Soc SE	Gen SE	Per SE	TOT SE	S Anx	T Anx	Dep	Age
Soc SE	-							
Gen SE	.68*	-						
Per SE	.45*	.68*	-					
S Anx.	-.49*	-.60*	-.52*	-.64*	-			
T Anx	-.56*	-.76*	-.73*	-.81*	.76*	-		
Dep	-.55*	-.71*	-.64*	-.75*	.46*	.63*	-	
Age	.14	.31#	.23†	.28#	-.15	-.30#	-.26#	-

† $p < .05$
# $p < .01$
* $p < .001$

Conclusion: Significant negative correlations exist between all areas of self-esteem with state anxiety, trait anxiety, and depression ($p < .001$). Hypothesis 1 is therefore supported. Lower levels of self-esteem is associated with higher levels of both anxiety and depression.

Total self-esteem scores and state anxiety scores are not more highly correlated than total self-esteem scores and trait anxiety, consequently Hypothesis 2 is rejected. Furthermore, all of the self-esteem subscales correlate more highly with trait anxiety than with state anxiety.

As can be observed from Table 3, depression and state anxiety are related by a correlation of .46 whereas depression and trait anxiety are related by a correlation of .63, therefore Hypothesis 3 is confirmed.

Hypotheses 4, 5, 6, and 7

Hypothesis 4: There will be no significant difference in self-esteem levels between males and females.

Hypothesis 5: There will be no significant difference in state anxiety levels between males and females.

Hypothesis 6: Females will report higher levels of trait anxiety than males.

Hypothesis 7: Females will report higher levels of depression than males.

Analysis: Means and standard deviations for both males and females on the Culture-Free Self-Esteem Inventory, State-Trait Anxiety Inventory, and the Beck Depression Inventory were calculated. Visual inspection reveals similar means for males and females on all measures. Several student's t-test were performed to determine if any of these differences were significant.

Table 4

Student t-test Comparing Males and Females on Self-Esteem, Anxiety, and Depression

Variable	Gender	Mean	S. D.	t-value	prob.
Self-Esteem	Males	23.92	6.47	.47	.64
	Females	23.24	6.40		
State Anxiety	Males	38.62	9.63	.28	.78
	Females	37.96	10.51		
Trait Anxiety	Males	39.54	8.79	-.40	.69
	Females	40.46	10.26		
Depression	Males	9.21	7.48	-.32	.75
	Females	9.74	7.19		

Conclusion: As can be determined from inspection of Table 4, there is no significant difference in self-esteem levels between males and females. Hypothesis 4 is therefore confirmed.

Likewise, a critical p value is not attained on state anxiety scores based on gender, consequently Hypothesis 5 is confirmed. There is no significant difference in state anxiety levels between males and females.

Similarly, a significant difference is not found between males and females on trait anxiety scores. Hypothesis 6 is therefore rejected. Females do not report higher levels of trait anxiety than males.

Table 4 also reveals no significant difference in level of depression between males and females, consequently Hypothesis 7 is rejected. Females do not report higher levels of depression than males.

Hypothesis 8

Hypothesis 8: There will be no relationship between age and self-esteem.

Table 5

Self-Esteem Scores by Age Groups

Group	Count	Mean	Std. Dev.
18 - 21 years (I)	31	20.06	7.91
22 - 26 years (II)	29	23.00	5.64
27 - 35 years (III)	31	24.74	4.92
36 - 58 years (IV)	31	25.64	5.46

Analysis: Upon visual inspection of Table 5, it is evident that a possible relationship may exist between age and self-esteem. To test this hypothesis, a one factor analysis of variance was performed as depicted in the following table.

Table 6

Analysis of Variance Comparing Age Groups on Self-Esteem

Source	df	SS	MS	F	p
Between Groups	3	561.50	187.17	5.03	.0026
Within Groups	118	4388.90	37.19		
Total	121	4950.40			

Conclusion: As can be observed from Table 6, a significant difference in levels of self-esteem is found among the age categories analyzed. Hypothesis 8 is therefore rejected. There is a relationship between age and self-esteem.

A Scheffé test (Table 7) was then employed to determine where the differences are among the age groups. This test reveals that the 18 - 21 year old group is significantly different from both the 26 - 34 year old group and the 35 - 58 year old group ($p < .05$).

Table 7

Scheffé F-test Comparing Age Groups on Self-Esteem

Comparison	Mean Difference	Scheffé F-test
Group I vs. Group II	-2.94	1.16
Group I vs. Group III	-4.68	3.04*
Group I vs. Group IV	-5.58	4.33**
Group II vs. Group III	-1.74	.41
Group II vs. Group IV	-2.65	.94
Group III vs. Group IV	-.90	.11

* p = < .05
** p = < .01

Hypothesis 9

Hypothesis 9: There will be a negative correlation between age and anxiety.

Table 8

State Anxiety and Trait Anxiety Scores by Age Groups

		State Anxiety		Trait Anxiety	
Group	Count	Mean	Std. Dev.	Mean	Std. Dev.
18 - 21 years (I)	31	40.55	11.65	45.52	10.84
22 - 26 years (II)	29	37.79	9.87	39.97	9.75
27 - 35 years (III)	31	37.81	9.53	38.55	7.87
36 - 58 years (IV)	31	36.19	10.04	37.06	9.48

Analysis: Mean differences exist in the anxiety scores for the age groups listed in Table 8. In order to determine if any of the differences are significant, a one factor analysis of variance was calculated for state anxiety and another for trait anxiety. The results are listed in Tables 9a and 9b, which follows.

Table 9a

Analysis of Variance Comparing Age Groups on State Anxiety

Source	df	SS	MS	F	p
Between Groups	3	303.90	101.30	.95	.4177
Within Groups	118	12550.11	106.36		
Total	121	12854.01			

Table 9b

Analysis of Variance Comparing Age Groups on Trait Anxiety

Source	df	SS	MS	F	p
Between Groups	3	1266.27	422.09	4.64	.0042
Within Groups	118	10740.26	91.02		
Total	121	12006.52			

Conclusion: As can be seen in Table 9a, no significant difference is found between the age groups and the state anxiety scores. Table 9b, however,

reveals a significant difference between age groups and trait anxiety scores. Hypothesis 9 is therefore confirmed for state anxiety and rejected for trait anxiety. There is a significant relationship between age and trait anxiety, but not between age and state anxiety.

A Scheffé test (Table 10) was performed to determine where the differences in trait anxiety exists among the age categories. This reveals that the youngest age group, 18 - 21 year olds, are significantly different from the 26 - 34 year olds, and the 35 - 58 year olds ($p < .05$). This younger group is more trait anxious than are their more aged peers.

Table 10

Scheffé F-test Comparing Age Groups on Trait Anxiety

Comparison	Mean Difference	Scheffé F-test
Group I vs. Group II	5.55	1.69
Group I vs. Group III	6.97	2.76*
Group I vs. Group IV	8.45	4.06**
Group II vs. Group III	1.42	.11
Group II vs. Group IV	2.90	.46
Group III vs. Group IV	1.48	.12

* $p = < .05$
** $p = < .01$

Hypothesis 10

Hypothesis 10: There will be no relationship between age and depression.

Table 11

Depression Scores by Age Groups

Group	Count	Mean	Std. Dev.
18 - 21 years (I)	31	12.52	7.92
22 - 26 years (II)	29	11.76	7.56
27 - 35 years (III)	31	7.13	5.73
36 - 58 years (IV)	31	7.26	5.98

Analysis: Means and standard deviations on the Beck Depression Inventory for the various age categories were calculated. Visual inspection of Table 11 reveals a possible relationship between age and depression. In order to test Hypothesis 10, a one factor analysis of variance was performed. The results of which are presented in the following table.

Table 12

Analysis of Variance Comparing Age Groups on Depression

Source	df	SS	MS	F	p
Between Groups	3	757.93	252.64	5.38	.0017
Within Groups	118	5540.47	46.95		
Total	121	6298.40			

Conclusion: A critical p value is obtained on depression scores based on age groups, consequently Hypothesis 10 is rejected. There is a significant relationship between age and depression. Additionally, the correlational matrix presented in Table 3 exhibits a correlation of -.26 between depression and age ($p < .01$).

To determine where the differences are among the age groups, a Scheffé test was employed (Table 13). These results show that again, the 18 - 21 year old group differ significantly ($p < .05$) from the 26 - 34 year olds and the 35 - 58 year olds. As a group these younger persons exhibit more depression than does their older peers.

Table 13

Scheffé F-test Comparing Age Groups on Depression

Comparison	Mean Difference	Scheffé F-test
Group I vs. Group II	.76	.06
Group I vs. Group III	5.34	3.19*
Group I vs. Group IV	5.26	3.04*
Group II vs. Group III	4.63	2.28
Group II vs. Group IV	4.50	2.16
Group III vs. Group IV	-.13	.00

* $p = < .05$

Hypothesis 11

Hypothesis 11: First born individuals and only born individuals will report significantly higher self-esteem levels than later born individuals and those with siblings.

Table 14

Self-Esteem Scores by Birth Categories

Group	Count	Mean	Std. Dev.
Only Borns	5	23.60	5.41
First Borns	35	25.40	5.20
Middle Borns	37	24.51	6.79
Last Borns	45	20.82	6.34

Analysis: Means and standard deviations on the Culture-Free Self-Esteem Inventory for the various birth categories were calculated. Visual inspection reveals similar means, but in order to test if there are any significant differences a one factor analysis of variance was performed. The results are given in Table 15.

Table 15

Analysis of Variance Comparing Birth Categories on Self-Esteem

Source	df	SS	MS	F	p
Between Groups	3	484.98	161.66	4.27	.0067
Within Groups	118	4465.42	37.84		
Total	121	4950.40			

Conclusion: A significant difference among the birth order categories and total self-esteem scores is found. A Scheffé test (Table 16) was performed to determine where the differences exist among the groups. This shows that first born individuals are significantly different from individuals born in the last position, therefore Hypothesis 11 is partially confirmed. Subjects who do not have any siblings are not significantly different from those with siblings, therefore this part of the hypothesis is rejected. First born individuals report significantly higher self-esteem levels than last born individuals, but only borns do not report significantly higher self-esteem levels than those persons with siblings.

Table 16

Scheffé F-test Comparing Birth Categories on Self-Esteem

Comparison	Mean Difference	Scheffé F-test
Only vs. First	-1.80	.12
Only vs. Middle	-.91	.03
Only vs. Last	2.78	.31
First vs. Middle	.89	.12
First vs. Last	4.58	3.63*
Middle vs. Last	3.69	2.44

* $p = < .05$

Hypothesis 12

Hypothesis 12: First born individuals and only born individuals will report significantly less anxiety than those born in later positions within the family and those with siblings.

Table 17

State Anxiety and Trait Anxiety Scores by Birth Categories

		State Anxiety		Trait Anxiety	
Group	Count	Mean	Std. Dev.	Mean	Std. Dev.
Only Borns	5	38.20	6.65	44.40	6.12
First Borns	35	38.00	11.24	37.63	10.21
Middle Borns	37	35.81	9.78	38.23	10.02
Last Borns	45	40.02	10.20	43.51	9.23

Analysis: Means and standard deviations on the State-Trait Anxiety Inventory based on birth category were calculated. Table 17 reveals similar mean state anxiety scores, but possible differences in levels of trait anxiety based on birth order. To test Hypothesis 12, a one factor analysis of variance was calculated on state anxiety and another on trait anxiety. The results are presented in Tables 18a and 18b.

Table 18a

Analysis of Variance Comparing Birth Categories on State Anxiety

Source	df	SS	MS	F	p
Between Groups	3	360.56	120.18	1.14	.3378
Within Groups	118	12493.46	105.88		
Total	121	12854.01			

Table 18b

Analysis of Variance Comparing Birth Categories on Trait Anxiety

Source	df	SS	MS	F	p
Between Groups	3	946.18	315.39	3.36	.021
Within Groups	118	11060.35	93.73		
Total	121	12006.52			

Conclusion: There is no difference among the birth order groups for state anxiety, but there is a difference among birth order groups for trait anxiety. Therefore, Hypothesis 12 is rejected based on state anxiety and is partially confirmed for trait anxiety.

A Scheffé test (Table 19) reveals that the differences among the birth categories for trait anxiety is small enough that it is not significantly different. However, significance is approached between the first borns and last borns, as well as between those with both older and younger siblings and only borns. First born individuals and only born individuals do not report significantly less anxiety than those born in later positions within the family and those with siblings.

Table 19

Scheffé F-test Comparing Birth Categories on Trait Anxiety

Comparison	Mean Difference	Scheffé F-test
Only vs. First	6.77	.71
Only vs. Middle	6.10	.58
Only vs. Last	.89	.01
First vs. Middle	-.67	.03
First vs. Last	-5.88	2.42
Middle vs. Last	-5.21	1.96

Hypothesis 13

Hypothesis 13: First born individuals will report significantly lower depression levels than those born in later positions within the family.

Table 20

Depression Scores by Birth Categories

Group	Count	Mean	Std. Dev.
Only Borns	5	6.60	6.43
First Borns	35	9.91	7.39
Middle Borns	37	7.68	6.91
Last Borns	45	11.36	7.13

Analysis: Means and standard deviations on the Beck Depression Inventory based on birth category are reported above. Visual inspection of Table 20 reveals possible differences in depression based on birth order, therefore a one factor analysis of variance was calculated. The results are reported in the following table.

Table 21

Analysis of Variance Comparing Birth Categories on Depression

Source	df	SS	MS	F	p
Between Groups	3	324.04	108.01	2.13	.0997
Within Groups	118	5974.36	50.63		
Total	121	6298.40			

Conclusion: No significant differences are found between the birth order categories, therefore this hypothesis is rejected. First born individuals do not report significantly lower depression levels than those born in later positions within the family.

Hypothesis 14, 15, and 16

Hypothesis 14: There will be no relationship between marital status and self-esteem or between marital status and anxiety.

Hypothesis 15: Those who are divorced or separated will report higher depression levels than those who are married.

Table 22

Self-Esteem, State Anxiety, Trait Anxiety, and Depression Scores by Marital Status

		Self-Esteem		State Anx.		Trait Anx.		Depression	
Marital Status	N	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Never Married	55	22.24	7.36	39.20	10.48	42.26	10.92	10.94	7.98
Married	49	24.10	5.20	35.94	9.80	38.53	8.28	8.12	6.00
Divorced or Separated	18	24.83	5.92	40.56	10.57	39.00	10.51	9.72	7.36

Analysis: Means and standard deviations on all of the personality inventories based on marital status were calculated. The scores across categories are similar, however tests were conducted to determine if any of these differences are significant. A series of one factor analysis of variance was performed and the results are given in the following tables.

Table 23

Analysis of Variance Comparing Marital Status on Self-Esteem

Source	df	SS	MS	F	p
Between Groups	2	135.48	67.74	1.67	.1918
Within Groups	119	4814.92	40.46		
Total	121	4950.40			

Table 24a

Analysis of Variance Comparing Marital Status on State Anxiety

Source	df	SS	MS	F	p
Between Groups	2	403.95	201.97	1.93	.1496
Within Groups	119	12450.06	104.62		
Total	121	12854.01			

Table 24b

Analysis of Variance Comparing Marital Status on Trait Anxiety

Source	df	SS	MS	F	p
Between Groups	2	393.88	196.94	2.02	.1374
Within Groups	119	11612.64	97.58		
Total	121	12006.52			

Table 25

Analysis of Variance Comparing Marital Status on Depression

Source	df	SS	MS	F	p
Between Groups	2	206.69	103.34	2.02	.1374
Within Groups	119	6091.71	51.19		
Total	121	6298.40			

Conclusion: Tables 23 through 25 reveal that no critical values of p were obtained, which confirms Hypothesis 14. There is no relationship between marital status and self-esteem or marital status and anxiety. Similarly, there is no relationship between marital status and depression. Hypothesis 15 is therefore rejected. Those who are divorced or separated do not report higher depression levels than those who are married.

Summary

From the results, one can conclude that a relationship exists between self-esteem, anxiety, and depression. Additionally, there are some differences in self-esteem, anxiety, and depression based on gender and birth order but not on marital status. The following chapter is a discussion of these results along with the limitations as well as implications of the findings.

V. DISCUSSION

The results of the current study support the view that a relationship exists between self-esteem, anxiety, and depression. Specifically, it is found that lower levels of self-esteem are associated with higher levels of anxiety and depression, and that higher levels of self-esteem are associated with lower levels of anxiety and depression. Additionally, the relationship between pairs of these personality constructs is investigated as well as the association between gender, age, birth order, and marital status with the personality constructs.

The Culture-Free Self-Esteem Inventory (CFSEI) contains a Lie scale to assess the degree of defensiveness in the responses of the subjects, in which higher scores are associated with lower levels of defensiveness. The participants in this study have a mean score of 6.23 out of a possible 8, which indicates low levels of defensiveness. The results are therefore taken to be quite an honest display of the subjects' personality characteristics.

The overall mean on the measure of self-esteem is 23.37 which, according to Battle (1992), is in the intermediate range. Means for the state-trait anxiety scores for the sample (38.09 and 40.28 respectively) are akin to the normed groups of college women (38.76 and 40.40 respectively). The mean score on the Beck Depression Inventory is 9.63, which is considered to be the high end of the normal range. Kendall et al. (1987) caution that the term depression should be reserved for individuals who score over 20 on the BDI, and preferably with concurrent diagnoses established through clinical interviews. Also, the random order of items within each set of the BDI was utilized, which is expected to produce higher depression scores than when the originial version is used (Dahlstrom et al., 1990).

All of the areas of self-esteem assessed by the CFSEI (Personal, Social, General), as well as the total self-esteem score derived by adding the scores on

these three subscales, are highly negatively correlated with state anxiety, trait anxiety, and depression. The highest correlations are found between all the self-esteem subscales and the total self-esteem score with trait anxiety, followed by self-esteem and depression. The lowest, but still significant correlations, are between the self-esteem scores and state anxiety. Total self-esteem scores are more highly correlated with state anxiety, trait anxiety, and depression than the correlation between anxiety and depression. This lends support to the position that anxiety and depression are different entities.

Contrary to the expected findings, self-esteem and state anxiety are not more highly correlated than self-esteem and trait anxiety. Furthermore, all of the subscales on the self-esteem scale have higher correlations with trait anxiety than with state anxiety. These results support the findings of Netz et al. (1988), as well as Dorr et al. (1985). The lower association between self-esteem and state anxiety, however, contradicts the findings of Matthews and Odom (1989) in their study of 10 to 13 year olds. Being an adolescent age group, possibly the perception of anxiety level at the moment affects the degree of self-esteem to a larger extent than in an adult age group. Adolescents' personalities are in a greater transition period than their older counterparts, thus momentary affect may have more of an impact on one's self-esteem than an adult's more established sense of self worth.

The current study is an exploration of correlational relationships and falls short of determining causality, but according to Epstein (1985), decreases in self-esteem produces increases in anxiety. Rosenberg (1965) also acknowledges that the lower a person's self-esteem level, the more likely they are to report physiological signs of anxiety, such as hand trembling, nervousness, and insomnia. This further indicates the possibility of a causal relationship between self-esteem and anxiety.

The association between self-esteem and depression is another important relationship. According to Battle (1980), the personal facet of self-esteem correlates higher with depression than the social facet. This is subsequently confirmed in this study and indicates that depression is characterized by diminished feelings of personal worth. The highest correlation, however, is between the total self-esteem score and depression (r=-.75) and the next highest is between the general self-esteem score and depression (r=-.71).

Depression and trait anxiety are found to be more highly correlated than depression and state anxiety. This was an expected finding which confirms previous research (Orme et al., 1986; Tanaka-Matsumi & Kameoka, 1986), even though most self-report measures of depression are intended to be state measures (Dobson, 1985b). Anxiety may lead to depression, rather than the other way around, therefore anxiety that is an enduring personality trait in the individual may affect the level of depression experienced. This conjecture is supported by Dobson (1985b), who points out that high-depressed but low-anxious people are rare, so that possibly the two constructs are hierarchically arranged, with depression being the superordinate response.

With regards to gender, it was hypothesized that there would be no significant difference in self-esteem levels between males and females. This hypothesis was subsequently confirmed which supports the numerous studies reviewed by Maccoby and Jacklin (1974), as well as research conducted by both Silverstone (1991) and Zuckerman (1989). According to O'Brien (1991), there is far more overlap than there is disparity between the genders in self-esteem. Males and females overall, regardless of demographical differences, view their own worth in comparable intensities.

Past literature has revealed conflicting results with regard to females and anxiety. On the other hand, males consistently exhibit either lower or similar

anxiety levels when compared to females. Based upon past literature, it was thought that although males and females would report similar levels of state anxiety, females would report higher levels of trait anxiety. In this study, however, no significant differences between males and females in either state or trait anxiety emerged. These findings support the works conducted by Dobson (1985) and Ray (1984) who also found no significant difference in anxiety based on gender. Possibly with a higher number of males, making more equivalent gender groups, different results would have been uncovered.

Numerous studies have declared that the prevalence rate of depression in females far exceeds the rate exhibited in males. The present investigation contradicts these findings by revealing no significant difference in depression based on gender. This substantiates research on Canadian groups conducted by Barnes et al. (1988) and Dobson (1985). Perhaps Canadians and Americans cannot be assumed to be a homogeneous group, but rather critical differences may exist between them. Depression could be one such difference. Another possibility is that gender distinctions in depression is a disappearing phenomenon (Barnes et al., 1988). Further research into this area must be undertaken, however, before any definitive statements can be made. Given that lower levels of education is associated with higher depression and that frequently women have significantly less education than men (Golding, 1988), it could also be that the current investigator found no gender differences in depression because the females in this sample are all attending college. The educational discrepancies between the genders is therefore less pronounced than in the general population.

Age was another demographic variable considered to be important in understanding the personality constructs under investigation. Few researchers have explored the relationship between age and self-esteem, but based on a

study by Silverstone (1991), it was hypothesized that there would be no significant relationship between age and self-esteem. This hypothesis is rejected and the results of a Scheffé test reveals that the youngest age group, 18 to 21 year olds, are significantly different from both the 27 to 34 year old group and the 35 to 58 year old group. As age increases, so does the level of self-esteem. Adolescence is often a time of great turmoil while discovering and establishing one's personality characteristics. The youngest group can be considered to be in the latter stages of adolescence (Manaster, 1977), so may still be defining their personality. Consequently, esteem levels may be lower until their likes, dislikes, characteristics, and sense of self-worth, is established. Peer groups are also extremely important to adolescents, to whom they generally compare themselves with in order to determine their own worth. Over the years individuals generally come to compare themselves against their own standards rather than others. This may contribute to the reasons why as age increases, so does self-esteem.

There have also been few studies which investigated the relationship between anxiety and age, and the ones that have been done have reported conflicting results. Some researchers (Spielberger, 1983; Nyamathi & Kashiwabara, 1988) uncovered a negative correlation between age and anxiety while others (Ray, 1984; Tanaka-Matsumi & Kameoka, 1986) reported no significant correlation. Although this investigation revealed no significant differences in state anxiety based on age groups, it did find differences in trait anxiety. As with self-esteem, a Scheffé test revealed that the 18 to 21 year old group is significantly distinctive from the oldest two groups (27 to 58 years). As age increases, levels of trait anxiety decreases. Past research has generally not differentiated between state and trait forms of anxiety, which the current study did. This may partially explain why the past findings have been

contradictory. Also, this analysis found that as age increases, so does self-esteem and that self-esteem and trait anxiety are more highly correlated than self-esteem and state anxiety. Consequently, this may be why there is a significant difference between age groups and trait anxiety, but not between age groups and state anxiety.

Conflicting findings have also been reported on the relationship between age and depression. The results of this investigation support the research by Barnes et al. (1988), who found that the older one is, the lower their levels of depression. This contradicts the findings of Garber (1984) and Golding (1988), who conveyed the opposite results. A similar argument may be made with depression and age as it was with anxiety. Age and self-esteem are positively correlated, whereas self-esteem and depression are negatively correlated. Consequently, it is logical that depression and age would also be negatively correlated. In summary, then, an individual's self-esteem generally raises while anxiety and depression lowers with age.

With all three personality constructs, the 18 to 21 year old group is significantly different from the 27 to 58 year olds. The second youngest group, the 22 to 26 year olds, did not differ significantly from the other age categories on any of the personality variables. This young group has the lowest self-esteem, highest anxiety, and highest depression compared to the older groups. Possibly because these young adults may still be going through the developmental stages of adolescence, they are anxious, depressed, and have low self-esteem. It is this age group, then, that needs particular attention. Perhaps by helping them deal with the developmental issues typical of late adolescence they may develop a better sense of self-worth, be less anxious and less depressed.

The association between birth order on self-esteem, anxiety, and depression was also the subject of investigation. As expected, first born individuals report significantly higher self-esteem levels than those born in the later positions within the family. These findings support the work by Gates et al. (1988) and Howarth (1982), whereby the former suggested this is due to the exclusive and substantial attention first borns receive before the birth of a sibling which remains a positive influence on them.

Contrary to Rosenberg's (1965) assertions, only borns in this study do not have higher esteem levels than those subjects with siblings. Perhaps these individuals do not receive the abundant attention from parents that they used to many years ago due to the increased number of mothers pursuing outside careers. This, coupled with changing societal demands, decrease the amount of time family members spend together as a unit.

Similarly, only borns do not report significantly less anxiety than those with siblings. The reasons could be analogous to those mentioned above regarding self-esteem levels. Also, because self-esteem and anxiety are highly correlated, the findings for only borns with regards to these two personality constructs are comparable.

Significant differences among the birth order groups for trait anxiety, but not for state anxiety, are revealed. A Scheffé test for trait anxiety, however, discloses small enough distinctions between the birth categories as to not be significant. More liberal tests of comparisons reveal differences between the first borns and last borns, which supports Howarth's (1980) finding of less anxiety among first borns. First borns also exhibit higher self-esteem levels, and since self-esteem and anxiety are highly correlated it appears to be logical that first borns would also demonstrate lower anxiety.

The final analysis involving birth order concerns depression levels. Contrary to research conducted by Gates et al. (1988), the first born individuals in this project do not report significantly lower scores on the depression inventory than later born individuals, although significance is approached. Since self-esteem, anxiety, and depression are so highly correlated and first borns report high self-esteem and low anxiety, it would be expected that they would also report low depression. Past research has demonstrated that higher levels of education are associated with lower levels of depression. The subjects in this study are all college students, which may have had an impact on their depression scores. Consequently, the birth order effects may appear in a group of subjects with more varied educational backgrounds.

The final demographic variable investigated in this project was marital status. It was hypothesized that there would be no significant relationship between marital status and either self-esteem or anxiety, which is confirmed by the results. This lends support to a similar report by Tanaka-Matsumi & Kameoka (1986).

With regards to depression, several researchers (Barnes et al. 1988; Golding, 1988; Sarason & Sarason, 1989) found that unmarried individuals, particularly those who are divorced or separated, exhibit higher depression levels than those who are married. The current study fails to support these findings. Again, the level of education among these subjects may be the explanation behind these results by serving as a stronger influence on the levels of depression than marital status.

To summarize the current study, there is a strong relationship between the psychological constructs of self-esteem, anxiety, and depression among adults in the general population. More specifically, self-esteem is highly negatively correlated with state anxiety, trait anxiety, and depression. Furthermore, state

anxiety, and especially trait anxiety, is highly positively correlated with depression. No significant gender differences are discovered on any of the personality variables under consideration. Subjects in the youngest age group, 18 to 21 years, report significantly lower levels of self-esteem, higher levels of anxiety, and higher levels of depression than those in the older age groups of 27 to 58 years. First borns report significantly higher self-esteem, and approach a significant difference in trait anxiety, but show no difference in depression or state anxiety. Finally, no significant differences in levels of self-esteem, anxiety, or depression is found based on marital status.

Limitations

The subjects for this study were not randomly chosen, thus the sample is not offered as representative of the general community. Respondents were also solicited from a single educational institution. However, a public institution was chosen in the belief that these students would be more akin to the community at large than students attending a religious private college. Also, two-thirds of the participants were enrolled in an evening class. Therefore, many of them were not full-time students, but rather were employed while taking a course in their spare time. This again made them more representative of the community at large. There could still exist, however, certain characteristics unique to a student population, such as having similar educational backgrounds and being motivated to enhance their knowledge.

Participation was voluntary and there were a small number of students who chose not to be involved in this study. Possibly the group of people who did not participate were in some way different from those who did. Regarding age, the sample was positively skewed giving a disproportionate number of students in the youngest age category. One-fourth of the sample was 18 to 21 years old

while only one-fourth was over the age of 34 years. Furthermore, none of the subjects were over the age of 58 years. It is possible that the large segment of younger subjects may hide important trends present with still older individuals. The sample was also disproportionate concerning gender. Of the total respondents, 80% were female. Given the large number of females, generalizations of the results to females can be made with some certainty. The males, however, are underrepresented, therefore no definitive and conclusive statements should be made about this group until further research confirms the results with a larger sample of males.

The final restriction concerns the means of assessing the psychological constructs. Data collection was limited solely to self-reports. The information used to calculate their scores assumed that participants provided honest and accurate answers. Self-reports also presuppose that the respondents have the ability to analyze and form accurate judgements on their internal states, which depends on factors such as intellect and verbal ability (Stavrakaki & Vargo, 1986).

To reduce the likelihood of influencing participants' choices, the anxiety scale was referred to as the "Self-Evaluation Questionnaire" as printed on the form and recommended in the manual (Spielberger, 1983). In order to reduce the probability of response sets, the items within each question on the Beck Depression Inventory were scrambled, as suggested by Dahlstrom et al. (1990). Despite the drawbacks, self-reports have the advantage of being an objective method of collecting the information required and reduce the influence of observer bias.

Implications

This study was focused upon psychological constructs that are experienced on some level by every individual. Considered together, the aim was to produce a fuller understanding of the interactions between the different constructs within the person. By better understanding the relationship between self-esteem, anxiety, and depression, counsellors may, by identifying one concern of the person, understand how it relates to the other personality constructs and give those facets of the individual the attention that is needed. Also, by understanding the relationship between demographic variables and psychological constructs, certain groups may be targeted as being at risk and preventive measures employed. For example, the 18 to 21 year olds demonstrate lower self-esteem, higher anxiety, and higher depression than their older counterparts. The special needs of this age group need to be addressed in order to help them raise their levels of self-esteem, and lower anxiety and depression. For many general counsellors, as well as college and university counsellors, these are important issues that need addressing, particularly with preventive measures. Self-esteem has been known to be inversely related to academic achievement (Beck, 1967), therefore raising self-esteem is of definite importance to a student population. Moreover, Heatherton and Polivy (1991) contend that it would seem desirable to attempt to treat anxious or depressed individuals by raising their self-esteem, since low self-esteem has been implicated in the development of a host of emotional problems.

Future Research

The findings discovered in this study point to various research directions for the future. The current investigation requires replication on a randomly selected

group of subjects in the general community to determine if the results remain consistent. Furthermore, the sample should include more subjects in the middle-age and older age groups to determine if differences exist for these populations. A subsequent sample should also include a higher number of males to ensure that the current results are truly representative of adult males. These findings could also lead to future studies in which certain demographic variables, such as age, are further examined to determine why and how they relate to the psychological constructs of self-esteem, anxiety, and depression. The relationship of these personality constructs under varying conditions (e.g., in times of stress), as well as in different populations (e.g., in a clinical population), could also be explored. Subsequent research could also employ different means of addressing these variables, as well as in combination, to determine the best method of raising self-esteem, lowering anxiety, and lowering depression.

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APPENDIX A

Thank you for your participation in this project. To assist in determining the relationship between certain personality variables and demographic variables, please complete the following questionnaire. No identifying information is being asked, therefore your anonymity is guaranteed.

1. Gender: Male _____ Female _____

2. Age: _____

3. Marital Status:

   Never married _____

   Married or common-law _____

   Separated _____

   Divorced _____

   Widowed _____

4. Check the level of education you have achieved:

   University graduate _____

   Some university, but did not graduate _____

   College graduate _____

   Some college _____

   High school graduate _____

   Some high school _____

   Other (business, art, etc) _____

5. Number of sisters and brothers (including step-sisters, step-brothers, half-sisters, and half-brothers if they lived with you for most of your childhood) that are:

   Older than you _____

   Younger than you _____